

# FR250

## OPERATION MANUAL



### SELF-POWERED RADIO AND FLASHLIGHT

FR250 AM/FM Shortwave radio,  
flashlight, and cell phone charger

*eton*<sup>®</sup>



## DO YOU NEED HELP?

We want you to thoroughly enjoy the use of this product. To take advantage of its many excellent and unique features, we urge you to carefully read the owner's manual. If you need help while learning its operation, please contact us, using the methods below.

Monday-Friday, 8:30 a.m. - 4:00 p.m.,  
North American Pacific Time.  
1-800-872-2228 from the U.S.  
1-800-637-1648 from Canada  
1-650-903-3866, worldwide  
FAX: 650-903-3867  
customersvc@etoncorp.com

Web Site: [www.etoncorp.com](http://www.etoncorp.com)

Mailing Address:  
Eton Corporation  
1015 Corporation Way  
Palo Alto, CA 94303  
USA

## TABLE OF CONTENTS

1	MAJOR FEATURES OF THE FR250.....	4
2	ABOUT THE BUILT-IN RECHARGEABLE BATTERY.....	5
3	USING DYNAMO POWER.....	5
4	AA BATTERY OPERATION.....	6
5	PREVENTING BATTERY ACID LEAKAGE.....	6
6	EMERGENCY OPERATION WITH NO POWER SOURCE.....	7
7	USING AN EXTERNAL POWER SOURCE AND NI-MH BATTERY CHARGING.....	7
8	USING THE FR250 AS A CELL-PHONE CHARGER.....	8
9	OPERATION GUIDE.....	8
	• TURNING THE FR250 ON AND OFF	
	• ADJUSTING THE VOLUME	
	• TUNING-IN STATIONS	
	• OPTIMIZING SHORTWAVE RECEPTION	
10	SERVICE INFORMATION.....	11
11	ONE YEAR LIMITED WARRANTY.....	12

## 1 MAJOR FEATURES OF THE FR250

---

- Nine Band Tuning – receives AM, FM and 7 shortwave bands.
- Built-in power generator recharges the internal rechargeable Ni-MH battery and cell phone batteries.
- Can be powered from four different sources: 1.) From the built-in rechargeable Ni-MH battery that takes charge from the dynamo crank and from an AC adaptor (AC adaptor not included); 2.) From 3 AA batteries; 3.) From the AC adaptor alone (AC adaptor not included); 4.) From the dynamo crank alone, even with no battery pack installed.
- Earphone jack – 3.5mm stereo earphone socket.
- Cell-Phone charger output jack 3.5mm.
- Can be operated on three AA size batteries.
- Incorporates a fine-tuning control knob superimposed on the main tuning control knob.
- Built-in light source.
- Pleasant audio from the 2 1/2 inch speaker.
- All antennas built-in: telescopic antenna for FM and SW; internal ferrite bar antenna for AM.
- Dimensions: 6.7W x 6.5H x 2.5D
- Weight: 1.3 lbs.

## 2 ABOUT THE BUILT-IN RECHARGEABLE BATTERY

---

The built-in rechargeable battery is a nickel-metal-hydride (Ni-MH) battery pack. It is charged by cranking the dynamo rapidly, about two turns per second, resulting in up to 60 minutes of low volume radio play when the battery is fresh. The battery pack is located in the battery compartment and can be replaced once it no longer holds a charge. In North America, replacements can be purchased directly from Eton Corporation. The generic specifications are: Ni-MH, 3.6 volt DC, 600 mAh. The replacement's voltage must be 3.6 volt DC, the milliamp-hour rating may be larger or smaller, e.g. 200 mAh or 800 mAh and the polarity must match red-to-red and black-to black on the plug-in cord. Since these are portable telephone batteries, they are available at many retail stores.

## 3 USING DYNAMO POWER

---

Turning the dynamo crank charges the built-in Ni-MH battery pack. It can be charged while the radio is playing or turned off, however it does not charge as efficiently when charged while playing, thus reducing playtime. With hand-crank dynamo charging, radio operation time depends on the number of turns and time per turn. With a fresh battery pack, 90 seconds of vigorous cranking, at about 2 turns per second, results in up to 60 minutes of radio play at low volume, without light use. If the light is on while playing the radio, radio playtime is somewhat reduced.

1. Switch the power selector to the OFF position.
2. Turn the dynamo-crank vigorously either clockwise or counter-clockwise. The red charging LED will be lit while charging.
3. To turn the radio on, switch the power selector switch to the center DYNAMOADAPTOR position.

## 4 AA BATTERY OPERATION

---

The FR250 is designed to operate on three AA batteries (not included). Best overall performance results with the use of alkaline or lithium AA batteries. Rechargeable AA batteries can also be used, however they must be charged in their own external charger. Lithium AA batteries are more costly and harder to find, yet provide two to four times the play-time of alkalines and provide a much longer shelf-life.

Install the batteries by removing the battery compartment cover and following the battery polarity diagrams imprinted on the underside of the cover. Remove the cover by simultaneously pressing on the indentation labeled OPEN and pulling it down toward the bottom of the radio. To play the FR250 on its AA batteries, turn the radio on by setting the power selector switch to the BATTERY position.

**NOTE:** When an AC adaptor is in use, the AA batteries are automatically switched off.

## 5 PREVENTING BATTERY ACID LEAKAGE

---

To avoid battery acid leakage, only use high quality alkaline, lithium or rechargeable nickel-metal-hydride batteries. Never intermix old with new, or different brands or types of batteries. Damage caused by battery acid leakage is not covered by this product's warranty. If the batteries leak, don't throw them away and immediately contact the manufacturer of the batteries to inquire about their battery leakage warranty program.

## 6 EMERGENCY OPERATION WITH NO POWER SOURCE

---

Even if no power source is available, including the Ni-MH battery pack, the radio and the light can still be operated by continually turning the dynamo crank with the power selector switch in the center DYNAMO/ADAPTOR position.

## 7 USING AN EXTERNAL POWER SOURCE AND NI-MH BATTERY CHARGING

---

The FR250 can be powered via an AC adaptor/charger (not included). Using an AC adaptor/charger automatically charges the internal Ni-MH battery pack. If the adaptor/charger meets the correct specifications it can be left plugged in without damaging the Ni-MH battery pack. When the battery pack is depleted it takes about 8 hours to charge it using the proper AC adaptor/charger. The Ni-MH battery pack will take charge with the power selector switch set to any of its positions.

For proper operation, the AC adaptor/charger must meet the specifications described below.

### AC ADAPTOR/CHARGER SPECIFICATIONS

Output of 4.5 volt DC; negative polarity; 80-200 milliamperes current capability; plug tip outer diameter of 3.4 millimeter, inner diameter of 1.3 millimeter.

To power the FR250 with an AC adaptor/charger, plug it into the DC socket on the rear of the FR250 and set the power selector switch to the center DYNAMO/ADAPTOR position.

**IMPORTANT NOTE:** If using an AC adaptor rated higher than 80-200 millamps, unplug the internal rechargeable battery.

## 8 USING THE FR250 AS A CELL-PHONE CHARGER

---

Because cell phone batteries vary in their current ratings, we cannot specify charging rates or usage time. There are two cell phone charging methods:

### METHOD 1 – DYNAMO

1. Slide the power selector switch to the OFF position.
2. Attach the cell phone to the Phone Charger socket on the rear of the FR-250, using the correct cell phone extension wire and adaptor plug that matches your phone.
3. Rotate the dynamo crank either clockwise or counter-clockwise at about 2 turns per second. (the cell phone Charging Indicator will activate during charging).

### METHOD 2 – AC ADAPTOR/CHARGER (NOT INCLUDED)

1. Slide the power selector switch to the OFF position.
2. Attach the cell phone to the Phone Charger socket on the rear of the FR-250, using the correct cell phone extension wire and adaptor plug that matches your phone.
3. Plug in the AC adaptor/charger to its socket on the radio.

## 9 OPERATION GUIDE

---

### TURNING THE FR250 ON AND OFF

Turn it on by selecting a power source of your choice as described above and by setting the power selector switch to the BATTERY or center DYNAMO/ADAPTOR position.

## OPERATION GUIDE continued

---

### ADJUSTING THE VOLUME

Turn the VOLUME control knob until the desired volume level is heard.

### TUNING-IN STATIONS

Set the band selector switch to the AM, FM or SW position. When using SW, select the desired shortwave band with the 7-position SW band selector knob. Tune stations in with the TUNING knob, using the superimposed FINE TUNING control as desired. For best FM and SW (shortwave) reception, fully extend the telescopic antenna. FM reception can often be improved by rotating the telescopic antenna. For AM reception, the telescopic antenna need not be extended, as the AM antenna is an internal, directional, ferrite bar antenna. For best AM reception, rotate the radio until the best signal strength is achieved. See below for how to optimize shortwave reception.

### OPTIMIZING SHORTWAVE RECEPTION

Shortwave enables listening to broadcasts over vast distances including other countries and continents. Being aware of the following information will help you get the best results.

- Shortwave reception is best around sunrise, sunset and at night.
- Night shortwave is usually superior to day shortwave reception.
- During the day, frequencies above 13 MHz are usually best.
- At night, frequencies below 13 MHz are usually best.
- Around sunset and sunrise, the entire shortwave range may be good.
- Getting very close to a window and holding the radio improves shortwave reception.

## OPERATION GUIDE continued

---

The Shortwave Band Chart, shown below, is also helpful. Shortwave is divided into 'bands'. Each band represents a specific frequency range in which broadcasting takes place.

FR250 BAND SWITCH	BAND (METER)	FREQUENCY RANGE (MHz)	BAND CHARACTERISTICS
SW1	49 m	5.90-6.35	Night band up to 8 am.
SW2	41 m	7.00-7.45	Night band up to 8 am.
SW3	31 m	9.50-9.95	Mainly a night band up to 8 am. Late afternoon in some areas.
SW4	25 m	11.65-12.05	Mainly a night band up to 8 am. Late afternoon in some areas.
SW5	22 m	13.50-13.95	Day band.
SW6	19 m	15.10-15.60	Day band.
SW7	16 m	17.60-18.10	Day band.

### USING THE LIGHT

Set the FLASHLIGHT to the ON position.

### USING THE EARPHONE JACK

Plug in a set of earphones (not included) of your choice that have a 1/8 inch mono or stereo plug. When using earphones the built-in speaker will be switched off automatically. Note that stereo earphones will work and sound will be heard from both sides, although FM is not received in stereo.

### USING THE SIREN

The siren can be used to attract attention in an emergency situation. To activate it, turn it on by selecting ON with the siren ON/OFF switch.

## 10 SERVICE INFORMATION

---

You may contact Eton Corporation Service Department for additional information or assistance by calling toll-free Monday through Friday, 8:30am -4:00pm Pacific Standard Time:

**1(800) 872-2228 (US)**  
**1(800) 673-1648 (CN)**  
**650-903-3866 (World-wide)**  
**or**  
**FAX: 650-903-3867**  
**[customersvc@etoncorp.com](mailto:customersvc@etoncorp.com)**  
**Web Site: [www.etoncorp.com](http://www.etoncorp.com)**

Call for a Return Authorization prior to shipping your unit. Should you want to return your unit for service, pack the receiver carefully using the original carton or other suitable container. Write your return address clearly on the shipping carton and on an enclosed cover letter describing the service required, symptoms or problems. Also, include your daytime telephone number and a copy of your proof of purchase. The receiver will be serviced under the terms of the Eton Corporation Limited Warranty and returned to you.

## 11 ONE YEAR LIMITED WARRANTY

---

Etón warrants to the original purchaser this product shall be free from defects in material or workmanship for one year from the date of original purchase.

During the warranty period Etón or an authorized Etón service facility will provide, free of charge, both parts and labor necessary to correct defects in material and workmanship. At their option, Etón may replace a defective unit.

- (1) Complete and send in the Warranty Registration Card within ten (10) days of purchase.
- (2) Call Etón or the nearest authorized service facility, as soon as possible after discovery of a possible defect. Have ready:
  - (a) the model and serial number.
  - (b) the identity of the seller and the approximate date of purchase.
  - (c) a detailed description of the problem, including details on the electrical connection to associated equipment and the list of such equipment.
- (3) Etón will issue a Return Authorization number and the address to which the unit can be shipped. Ship the unit in its original container or equivalent, fully insured and shipping charges prepaid.

Correct maintenance, repair, and use are important to obtain proper performance from this product. Therefore carefully read the Instruction Manual. This warranty does not apply to any defect that Etón determines is due to:

## ONE YEAR LIMITED WARRANTY continued

---

- (1) Improper maintenance or repair, including the installation of parts or accessories that do not conform to the quality and specification of the original parts.
- (2) Misuse, abuse, neglect or improper installation.
- (3) Accidental or intentional damage.
- (4) Battery leakage.

All implied warranties, if any, including warranties of merchantability and fitness for a particular purpose, terminate one (1) year from the date of the original purchase.

The foregoing constitutes Etón's entire obligation with respect to this product, and the original purchaser shall have no other remedy and no claim for incidental or consequential damages, losses, or expenses. Some states do not allow limitations on how long an implied warranty lasts or do not allow the exclusions or limitation of incidental or consequential damages, so the above limitation and exclusion may not apply to you.

This warranty give you specific legal rights and you may also have other rights which vary from state to state.

For service information contact:

**Etón Corporation**  
1015 Corporation Way  
Palo Alto, CA 94303  
U.S.A.  
[www.etoncorp.com](http://www.etoncorp.com)

1-800-872-2228 from the U.S.

1-800-637-1648 from Canada

1-650-903-3866, worldwide

FAX: 650-903-3867

[customersvc@etoncorp.com](mailto:customersvc@etoncorp.com)

[www.etoncorp.com](http://www.etoncorp.com)

***eton* Corporation**

1015 Corporation Way

Palo Alto, California 94303

USA

*eton*<sup>®</sup>